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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/706,623	11/12/2003	Sridhar Balasubramanian	03-1127	7990

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LSI Logic Corporation  
Legal Department - IP  
MS D-106  
1621 Barber Lane  
Milpitas, CA 95035

EXAMINER
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LEE, CHUN KUAN

ART UNIT	PAPER NUMBER
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2181

DATE MAILED: 06/21/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/706,623	<b>Applicant(s)</b> BALASUBRAMANIAN ET AL.
	<b>Examiner</b> Chun-Kuan (Mike) Lee	<b>Art Unit</b> 2181

**– The MAILING DATE of this communication appears on the cover sheet with the correspondence address –**  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 12 November 2003.
- 2a) ☐ This action is **FINAL**.      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119


- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_

- 4) ☐ Interview Summary (PTO-413) \_\_\_\_\_  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

  
**FRITZ FLEMING**  
**Supervisory PRIMARY EXAMINER**  
**GROUP 2100**  
6/12/2006  
4181

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 101***

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

1. Claims 9-12 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. It appears that the independent claim 9 does not produce a tangible result, as there is no specific limitation in the body of the method claim regarding what to do after obtaining a baud rate based on the amount of time. Dependent claims 10-12 are rejected because of direct dependency on the independent claim 9, and further more, each of the dependent claims does not appear to have claimed limitation that produce the required tangible result.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 9-12 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As per claim 9, it appears unclear if the preamble recited by the applicant regarding the "initialization of a storage controller" is an intended use or a positive

limitation for the claimed method. Examiner will assume that the "initialization of a storage controller" in the preamble is the intended use for the claimed method.

As per claims 10-12, claims 10-12 are rejected due to direct dependency on the independent claim 9.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 3, 5, 13, 15 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Admit prior Art (AAPA) in view of Wood et al. (PS Patent 6,915,363).

4. As per claims 1 and 13, AAPA teach a storage network system and method, comprising:

a storage system (disk subsystem) (Specification, page 2, ll. 9-10);

a storage controller (disk/RAID controller), wherein the storage controller provides access to the storage system (storage system comprising of two or more hard disks) (Specification, page 2, ll. 10-12) and wherein the storage controller has a serial port (Specification, page 2, ll. 14-15); and

an external device, electrically coupled to the storage controller through the serial port (Specification, page 2, ll. 14-15),

wherein the storage controller have a plurality of serial port parameter settings including baud rate, data bits, stop bits, priority and flow control (Specification, page 2, ll. 17-18).

AAPA does not teach the storage network system and method, comprising wherein the storage controller receives at least one serial port parameter value for a set of serial port parameters, wherein the at least one serial port parameter is selectable by an operator; and initializes the serial port on the storage controller using the received serial port parameter values.

Wood teaches a system and a method comprising a subsystem controller (Fig. 3, ref. 314) providing access to a storage system comprising a plurality of disk drives (Fig. 3, ref. 330, 338, 342, 346, 350, 354) over a serial connection (conforming to the serial ATA standard), wherein a host computer (Fig. 3, ref. 302) selects and sends a start command and when the subsystem controller receives the start command, the port controller (Fig. 3, ref. 324, 326) is activated utilizing the start command (col. 6, ll. 35-59 and col. 9, ll. 14-35).

It would have been obvious to one of ordinary skill in this art, at the time of invention was made to include Wood's start command into AAPA's plurality of serial port parameter settings. The resulting combination of the references teaches the storage network system and method further comprising wherein the plurality of serial port parameter settings including start command, baud rate, data bits, stop bits, priority and

flow control; the host (operator) selecting and sending the start command; and the subsystem controller receives and utilizes the start command to activate (initialize) the port controller, wherein the port controller operates in accordance to the serial ATA standard, therefore the port controller is a serial port controller.

Therefore, it would have been obvious to combine Wood with AAPA for the benefit of proper communication between the host and the peripheral utilizing out-of-band (OOB) signaling, and further more, providing greater control in initializing the inexpensive array of ATA disk drives (Wood, Abstract and col. 2, ll. 51-59).

5. As per claims 3 and 15, AAPA and Wood teach all the limitations of claims 1 and 13 as discussed above, where Wood further teaches the storage network system and method, comprising:

a host device (Wood, Fig. 3, ref. 302), electrically coupled to the storage controller (Wood, Fig. 3, ref. 312, 314),

wherein the storage controller receives the at least one serial port parameter value (start command) from the host device (Wood, col. 6, ll. 35-59), wherein upon the subsystem controller receiving the start command, the subsystem controller further transfer the start command to the corresponding port controller.

6. As per claims 5 and 17, AAPA and Wood teach all the limitations of claims 1 and 13 as discussed above, where AAPA further teaches the storage network system and method, comprising wherein the set of serial port parameters includes at least one of a

baud rate, a number of data bits, a number of stop bits, a parity and a flow control (AAPA, Specification, page 2, ll. 17-18).

7. Claims 2 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over AAPA and Wood et al. (PS Patent 6,915,363), and further in view of Farrand et al. (US Patent 5,559,958).

AAPA and Wood teach all the limitation of claims 1 and 13 as discussed above, wherein Wood further teaches the storage network system and method, comprising a plurality of mode of communication options including communication conforming to serial ATA, USB, Firewire and Fiber Channel (Wood, col. 6, ll. 15-18 and col. 7, ll. 17-19).

AAPA and Wood does not expressly teach the storage network system and method, comprising: wherein the storage controller receives the at least one serial port parameter value by presenting a boot menu, wherein the boot menu includes a serial console mode, receiving a user selection of a serial console mode, presenting the serial console mode, and receiving operator selection of at least one serial port parameter value in the serial console mode.

Farrand teaches a graphic user interface (GUI) for computer management system and method comprising:

displaying to a user a file server menu, wherein the file server menu includes a engineering server subsystem (Fig. 10);

receiving a user selection of the engineering server subsystem (Fig. 10-11);

presenting the engineering server subsystem (Fig. 11);  
receiving the user selectively depressing one of the engineering server subsystem button comprising a configuration subsystem button (Fig. 11, ref. 516), an input/output subsystem button (Fig. 11, ref. 528), a disk storage subsystem button (Fig. 2111, ref. 520) and a security configuration subsystem button (Fig. 11, ref. 518) (Fig. 11 and col. 197, ll. 1-14).

It would have been obvious to one of ordinary skill in this art, at the time of invention was made to include Farrand's GUI menu into AAPA and Wood's storage network system and method. The resulting combination of the references teaches the storage network system and method further comprising:

displaying to the user an initialization menu, wherein the initialization menu includes the serial ATA communication mode;

receiving the user selection of the serial ATA communication mode;

presenting the serial ATA communication mode, wherein the serial ATA communication mode comprises the plurality of serial port parameter settings including start command, baud rate, data bits, stop bits, priority and flow control; and

receiving the user selecting of at least one serial port parameter value in the serial communication mode comprising the start command.

Therefore, it would have been obvious to combine Farrand with AAPA and Wood for the benefit of providing a GUI interface which enable the user/operator to easily select the available options/functions rather than requiring complex typing of commands to implement the desire functionalities.



8. Claims 4 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over AAPA and Wood et al. (PS Patent 6,915,363), and further in view of Harrington (US Patent 6,480,958).

As per claims 4 and 16, AAPA and Wood teach all the limitation of claims 3 and 15 as discussed above.

AAPA and Wood does not expressly teach the storage network system and method, further comprising wherein the storage controller has a hard-coded password for authenticating an operator of the host device before receiving the at least one serial port parameter values from the host device.

Harrington teaches a system and a method comprising a user entering the information comprising a secret password and a personal user name or identification number and verifying the entered information is correct before granting access to the user (col. 1, ll. 30-45).

It would have been obvious to one of ordinary skill in this art, at the time of invention was made to include Harrington's entering and verification of the secret password and the personal user name or identification number into AAPA and Wood's storage network system and method. The resulting combination of the references teaches the storage network system and method further comprising the user/operator to enter the information comprising the secret password and the personal user name or identification number and verifying the entered information is correct before enabling the receiving of the start command send by the user/operator.

Therefore, it would have been obvious to combine Harrington with AAPA and Wood for the benefit of providing security measures to ensure the receiving of the serial port parameter settings only from authorized user/operator (Harrington, col. 1, ll. 30-33).

9. Claims 6-8 and 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over AAPA and Wood et al. (PS Patent 6,915,363), and further in view of Walter et al. (US Patent 6,847,615).

10. As per claims 6 and 18, AAPA and Wood teach all the limitation of claim 1 and 13 as discussed above, where AAPA further teaches the storage network system and method, comprising:

wherein the set of serial port parameters includes baud rate (AAPA, Specification, page 2, ll. 17-18); and

wherein the serial port parameter including baud rate is invoked as the user utilizing a break key sequence (AAPA, Specification, page 2, l. 28 to page 3, l. 1).

AAPA and Wood does not teach the storage network system and method, comprising wherein receiving at least one serial port parameter value includes the external device performing an adaptive baud rate negotiation between the storage controller and the external device.

Walter teaches a system and a method for baud rate detection for serial data comprising the negotiating the baud rate of the transferring data by utilizing the function of setting a receiving device (storage device) to a correct baud rate for receiving data

(col. 2, ll. 8-15), wherein the data received comprises of a predetermined data word, such as one of the character 'A' or 'a', and the next character in the serial data transmission may be 'T' or 't' (col. 2, ll. 49-52 and col. 6, ll. 43-49).

It would have been obvious to one of ordinary skill in this art, at the time of invention was made to include Walter's function for setting the correct baud rate into AAPA and Wood's storage device. The resulting combination of the references teaches the storage network system and method further comprising the user utilizing the external device to send the predetermined data word comprising the break key sequence to enable the storage device to implement the function setting the correct baud rate for receiving data.

Therefore, it would have been obvious to combine Walter with AAPA and Wood for the benefit of providing the automatic determination of baud rate for the serial data transmission (Walter, Abstract and col. 2, ll. 1-2).

11. As per claims 7 and 19, AAPA, Wood and Walter teach all the limitation of claims 6 and 18 as discussed above, where AAPA and Walter further teach the storage network system and method, comprising:

wherein the external device performs an adaptive baud rate negotiation by sending a break key sequence from the external device to the storage controller (AAPA, Specification, page 2, l. 28 to page 3, l. 1 and Walter, col. 2, ll. 49-52),

determining an amount of time between a start bit and a stop bit (Walter, col. 4, ll. 37-61 and col. 9, ll. 12-17), wherein the processor must determine the amount of time

between the start bit and the stop bit in order to program the timer to generate a interrupt, and

obtaining a baud rate based on the amount of time (Walter, col. 9, ll. 18-45), wherein the baud rate is determined base on the interrupt generated by the timer and the processor's detection of the priority bit.

12. As per claims 8 and 10, AAPA, Wood and Walter teach all the limitation of claims 7 and 19 as discussed above, where Walter further teaches the storage network system and method, comprising wherein the external device obtains a baud rate based on the amount of time includes performing a look-up of the baud rate in a look-up table (Walter, col. 2, ll. 55-58 and col. 6, ll. 43-49).

13. Claims 9-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over AAPA in view of Walter et al. (US Patent 6,847,615).

14. As per claim 9, AAPA teaches a method of performing an adaptive baud rate negotiation for serial port initialization in a storage controller, wherein the storage controller (disk/RAID controller) includes a serial port for connection to an external device (Specification, page 2, ll. 14-15), the method comprising sending a break key sequence from the external device to the storage controller (AAPA, Specification, page 2, l. 28 to page 3, l. 1), wherein the user invoke the break key sequence to cycle through bald rate values for the serial port;

AAPA does not teach the method comprising:

determining an amount of time between a start bit and a stop bit; and  
obtaining a baud rate based on the amount of time.

Walter teaches a system and a method for baud rate detection for serial data comprising the negotiating the baud rate of the transferring data by utilizing the function of setting a receiving device (storage device) to a correct baud rate for receiving data (col. 2, ll. 8-15), wherein the data received comprises of a predetermined data word, such as one of the character 'A' or 'a', and the next character in the serial data transmission may be 'T' or 't' (col. 2, ll. 49-52 and col. 6, ll. 43-49);

the processor determining the amount of time between the start bit and the stop bit in order to program the timer to generated a interrupt (col. 4, ll. 37-61 and col. 9, ll. 12-17); and

obtaining a baud rate based on the interrupt generated by the timer and the processor's detection of the priority bit (col. 9, ll. 18-45).

It would have been obvious to one of ordinary skill in this art, at the time of invention was made to include Walter's function for setting the correct baud rate into AAPA's storage device. The resulting combination of the references teaches the method further comprising the user utilizing the external device to send the predetermined data word comprising the break key sequence to enable the storage device to implement the function to set the correct baud rate for receiving data base on the interrupt generated by the timer and the processor's detection of the priority bit,

wherein the processor will determine the amount of time between the start bit and the stop bit in order to program when the timer would generate the interrupt.

Therefore, it would have been obvious to combine Walter with AAPA for the benefit of providing the automatic determination of baud rate for the serial data transmission (Walter, Abstract and col. 2, ll. 1-2).

15. As per claim 10, AAPA and Walter teach all the limitation of claim 9 as discussed above, where Walter further teaches the method comprising wherein obtaining a baud rate based on the amount of time includes performing a look-up of the baud rate in a look-up table (Walter, col. 2, ll. 55-58 and col. 6, ll. 43-49).

16. Claims 11-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over AAPA and Walter et al. (US Patent 6,847,615), and further in view of Hollingsworth.

AAPA and Walter teach all the limitation of claim 9 as discussed above.

AAPA and Walter does not teach the method comprising

resending the break key sequence responsive to a timeout condition; and

repeating the sending, determining, and obtaining steps until a timer expires.

Hollingsworth teaches the communication between a transmitter and a receiver, wherein if the Disconnect Request (DR), send by the transmitter, is not acknowledged by the receiver, the transmitter resend the DR due to a timeout condition (page 7, Fig. (c)) and if the DR is not acknowledged after a period of time of N timeout conditions, the transmitter stops the resending of the DR (page 7, Fig. (d)).

It would have been obvious to one of ordinary skill in this art, at the time of invention was made to include Hollingsworth's timeout condition into AAPA and Walter's method for the adaptive baud rate negotiation. The resulting combination of the references teaches the method further comprising the retransmission of the break key sequence if the correct baud rate is unable to be obtained when the timeout condition occurs and if the correct baud rate is unable to be obtained after the time period of N timeouts, which may result in the expiration of a timer, the attempt to obtain the correct baud rate stops.

Therefore, it would have been obvious to combine Hollingsworth with AAPA and Walter for the benefit of proper detection if there is a failure in the attempt to obtain the proper baud rate for communication.


### Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chun-Kuan (Mike) Lee whose telephone number is (571) 272-0671. The examiner can normally be reached on 8AM to 5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Fritz M. Fleming can be reached on (571) 272-4145. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

C.K.L.  
06/09/2006

*Supervisory*  
  
FRITZ FLEMING  
PRIMARY EXAMINER 6/12/2006  
GROUP 2100  
AU 2181